Generating ABI PRISM® 7700 Standard Curve Plots in a Spreadsheet Program

Overview

The goal of this tutorial is to demonstrate the procedure through which analyzed data generated within an ABI PRISM® 7700 data file can be exported and regenerated in Microsoft® Excel. This tutorial demonstrates how to generate a Standard Curve.

The following tutorial should be used as a guideline only. For further information on how to use Microsoft® Excel and Chart Wizard, please refer to the Microsoft® Excel user manual. Applied Biosystems does not support Microsoft® Excel or any other Microsoft® Software.

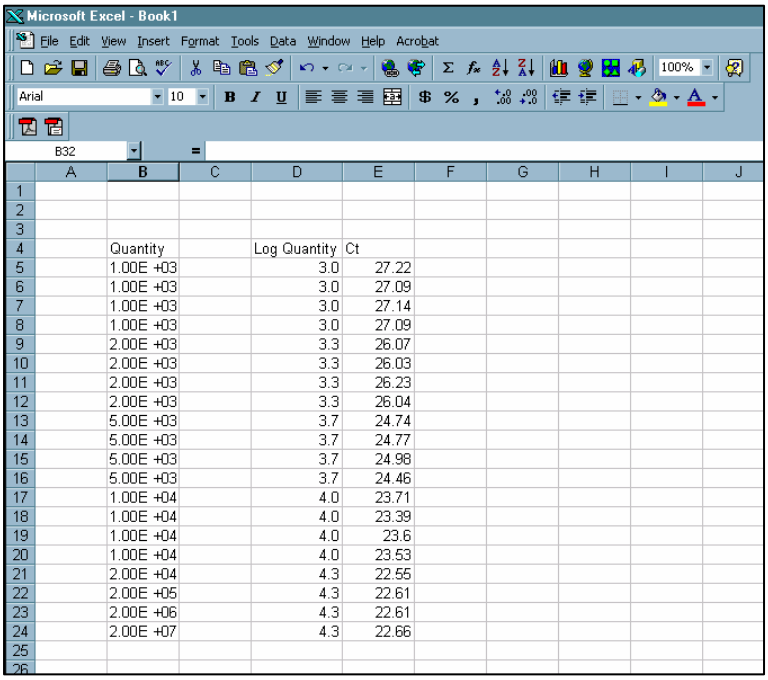
Manipulations within the ABI PRISM® 7700 software

1. Open the SDS data file to be analyzed.
2. Analyze the data and set the baseline and threshold according to Applied Biosystems guidelines. To obtain more information on baseline and threshold setting guidelines please refer to the ABI Prism 7700: Setting Baselines and Thresholds tutorial, available on-line at: http://www.appliedbiosystems.com/support/apptech
3. From the File menu, select “Export” and “Results”. You may either export all of the data or data from selected wells (click the appropriate button).
4. The default file name will be “data.results”. Provide a name and file location for this data. It is suggested that you keep the suffix “.results”.

Manipulations within Microsoft® Excel

1. Open a new Workbook in Microsoft® Excel.
2. Select File, “Open”.
3. Open the results file.
4. Copy and Paste the Quantities and Ct values from this data into a new Worksheet.
5. Create a column between the Quantities column and the Ct column.
6. The Quantities need to be converted to their log value. To do this, click on the *fx* icon on the Toolbar. Click on Math and Trig, and select Log.

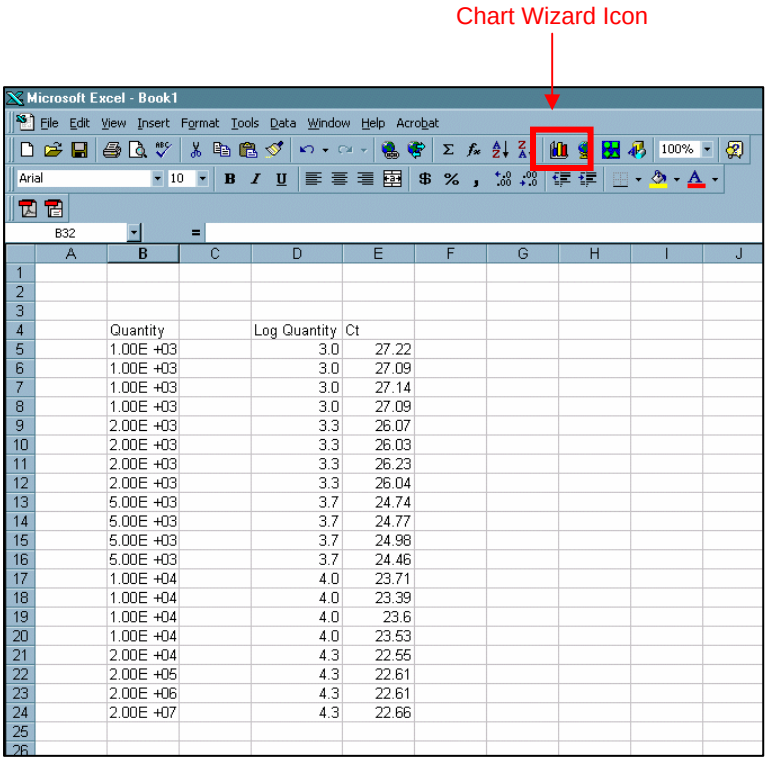
7. Convert the quantities into their log values in the appropriate column. The log values will be displayed on the x-axis and the Ct values on the y-axis.



	A	B	C	D	E	F	G	H	I	J
1										
2										
3										
4		Quantity		Log Quantity	Ct					
5		1.00E +03		3.0	27.22					
6		1.00E +03		3.0	27.09					
7		1.00E +03		3.0	27.14					
8		1.00E +03		3.0	27.09					
9		2.00E +03		3.3	26.07					
10		2.00E +03		3.3	26.03					
11		2.00E +03		3.3	26.23					
12		2.00E +03		3.3	26.04					
13		5.00E +03		3.7	24.74					
14		5.00E +03		3.7	24.77					
15		5.00E +03		3.7	24.98					
16		5.00E +03		3.7	24.46					
17		1.00E +04		4.0	23.71					
18		1.00E +04		4.0	23.39					
19		1.00E +04		4.0	23.6					
20		1.00E +04		4.0	23.53					
21		2.00E +04		4.3	22.55					
22		2.00E +05		4.3	22.61					
23		2.00E +06		4.3	22.61					
24		2.00E +07		4.3	22.66					
25										
26										

Opening Chart Wizard:

1. Go to the Chart Wizard icon located on the Excel tool bar and click to open.



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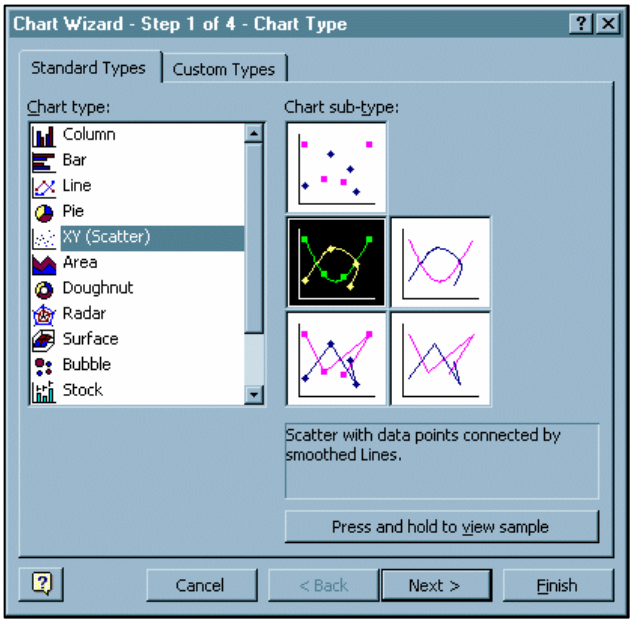
11		2.00E +03		3.3	26.23					
12		2.00E +03		3.3	26.04					
13		5.00E +03		3.7	24.74					
14		5.00E +03		3.7	24.77					
15		5.00E +03		3.7	24.98					
16		5.00E +03		3.7	24.46					
17		1.00E +04		4.0	23.71					
18		1.00E +04		4.0	23.39					
19		1.00E +04		4.0	23.6					
20		1.00E +04		4.0	23.53					
21		2.00E +04		4.3	22.55					
22		2.00E +05		4.3	22.61					
23		2.00E +06		4.3	22.61					
24		2.00E +07		4.3	22.66					
25										
26										

Chart Wizard Step 1: Chart Type

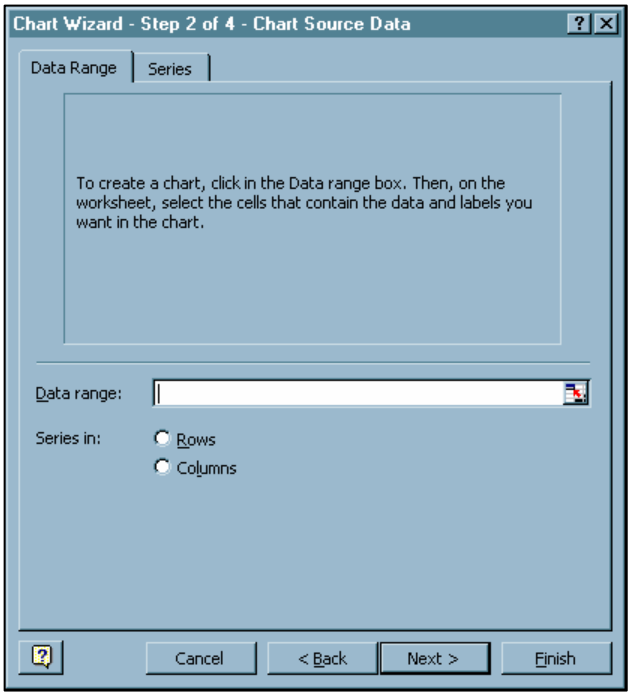
1. For the chart type, select XY (scatter) and the chart sub-type highlighted



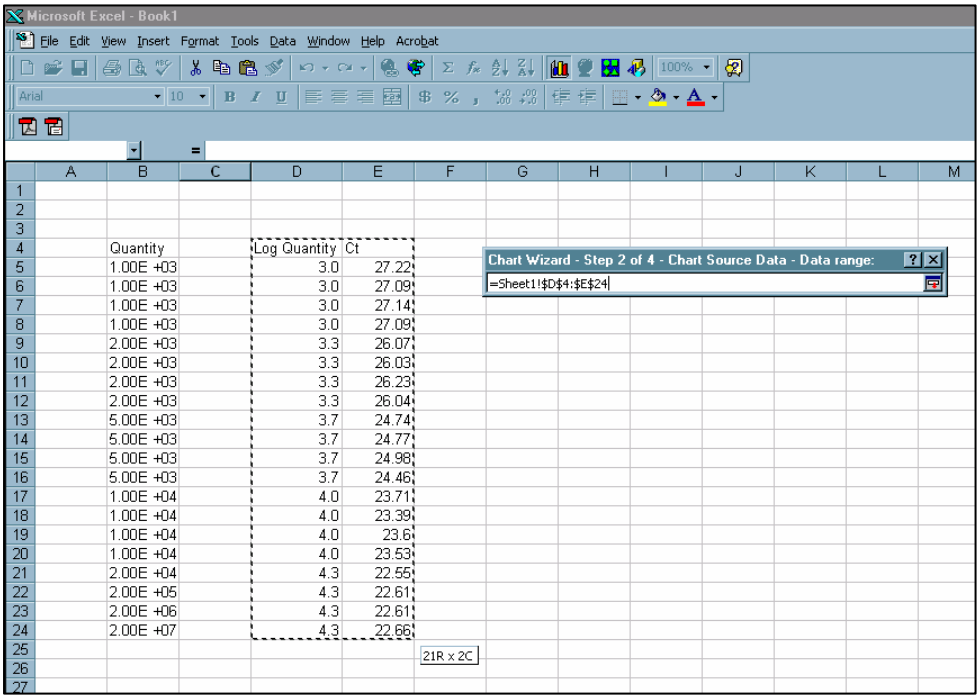
2. Click "Next".

Chart Wizard Step 2: Chart Source Data

1. Chart Wizard now asks for a Data Range.



2. To select a data range, place your cursor at the top corner of the data points to be used. Click and drag to highlight the data points. Include the data for both axes. The data points will be plotted in the Chart Wizard.



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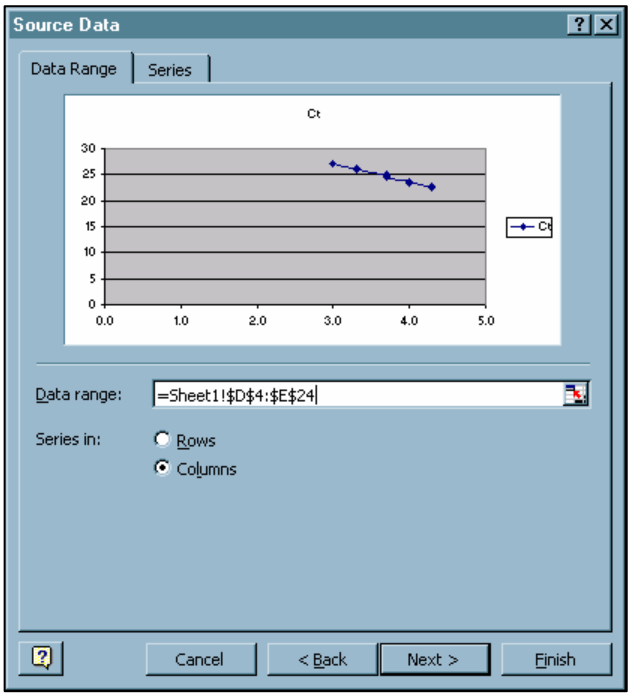
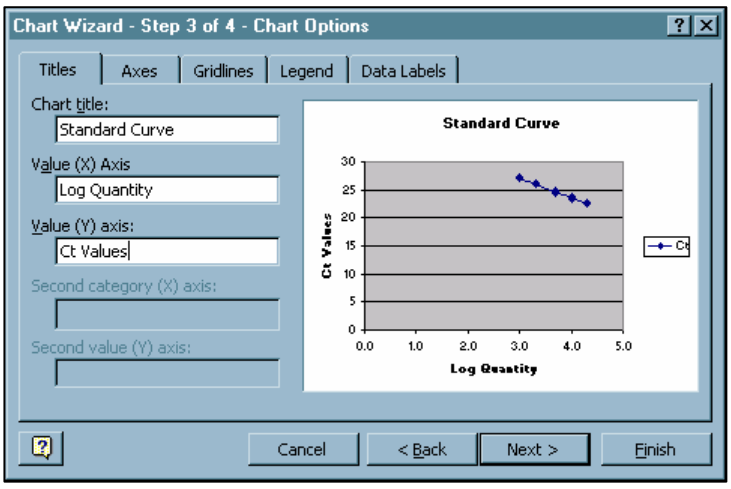
27													



3. Click “Next”.

Chart Wizard Step 3: Chart Options

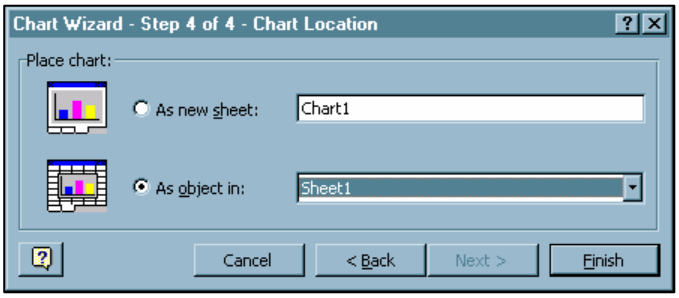
1. Click on the Titles tab and name the chart title and axes.

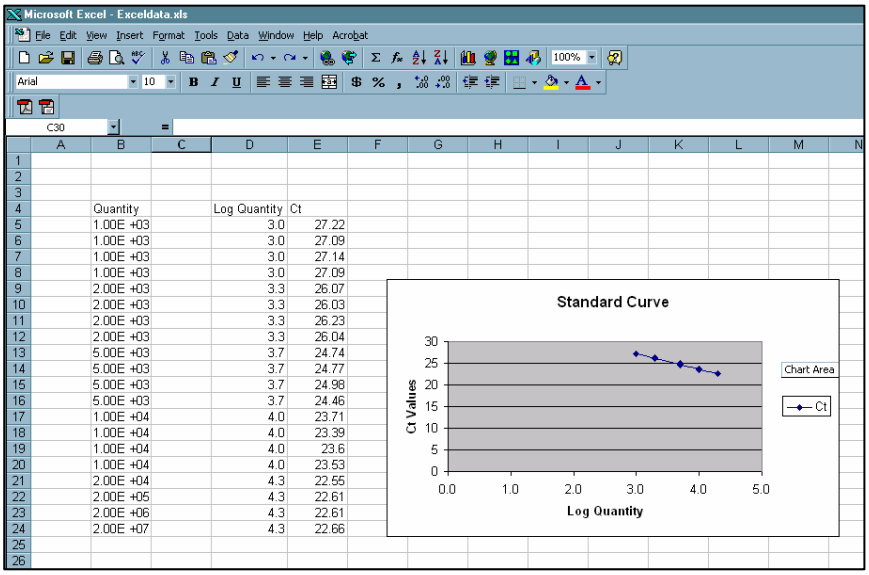


2. Click “Next”.

Chart Wizard Step 4: Chart Location

1. Select a location for the chart. The chart can be created in a new sheet or within the current spreadsheet. In this example the chart will be created in the open spreadsheet.





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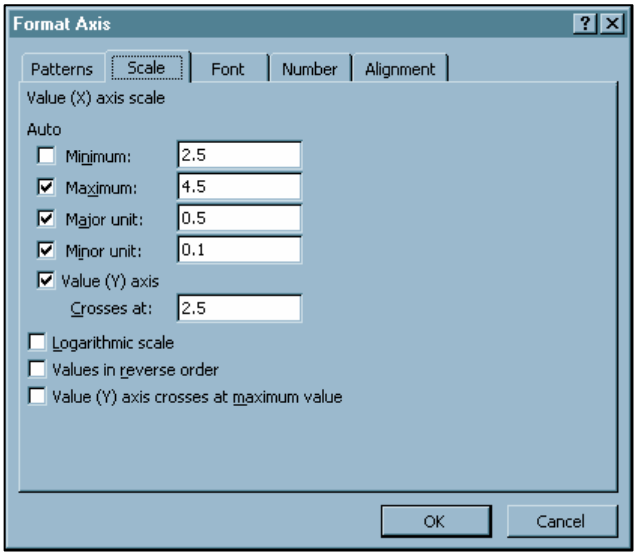
22	2.00E +05	4.3	22.61
23	2.00E +06	4.3	22.61
24	2.00E +07	4.3	22.66

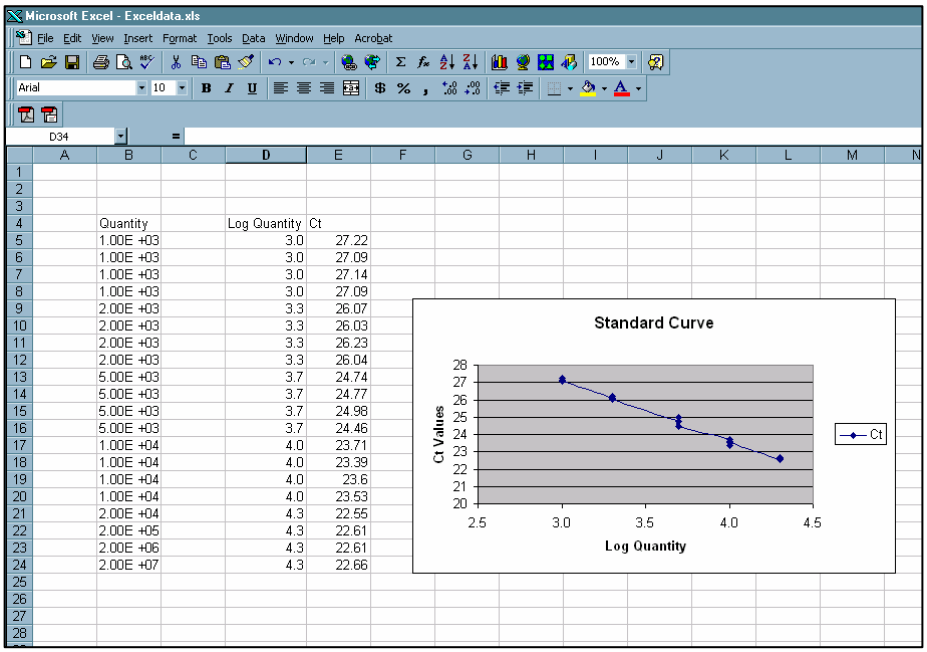
Formatting the Graph

Formatting the X and Y axis

1. To adjust the X-axis and Y-axis to the appropriate scale, move the cursor over the appropriate axis and double click. Change the scale accordingly.



2. Click “OK”.



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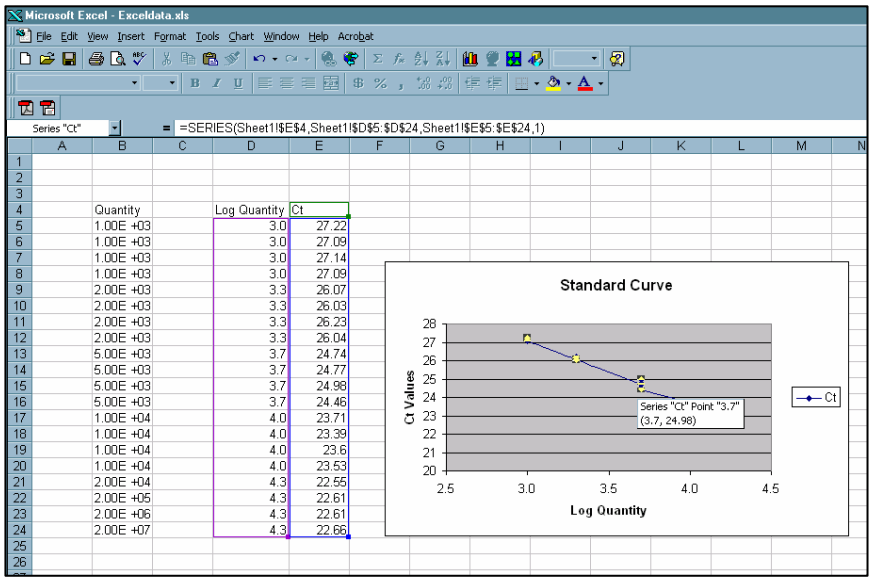
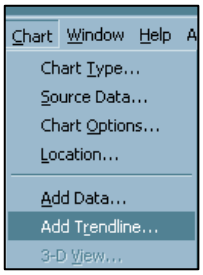
21	2.00E +04	4.3	22.55
22	2.00E +05	4.3	22.61
23	2.00E +06	4.3	22.61
24	2.00E +07	4.3	22.66

Adding a Trend Line

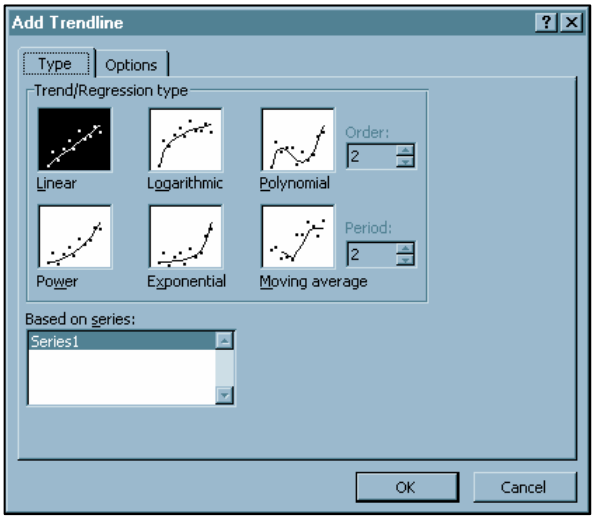
1. To add a Trend Line, place the cursor on a point of the graph and click once to highlight the data points.



2. From the Chart tab on the menu bar, select “Add Trendline…”



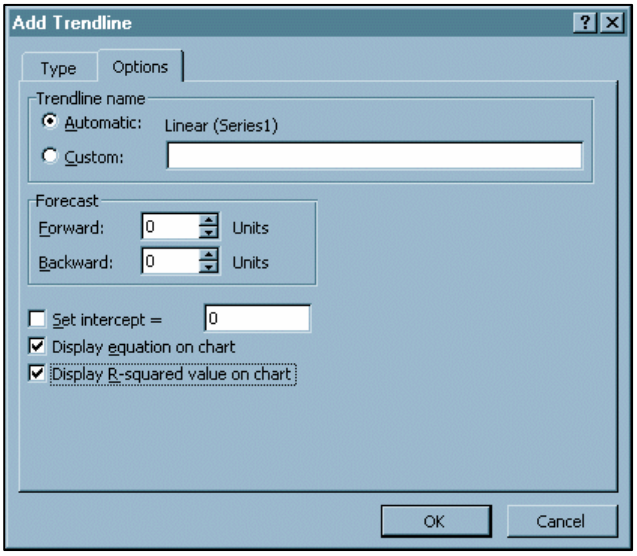
3. Under the “Type” tab, highlight “Linear”.



4. Click “OK”.

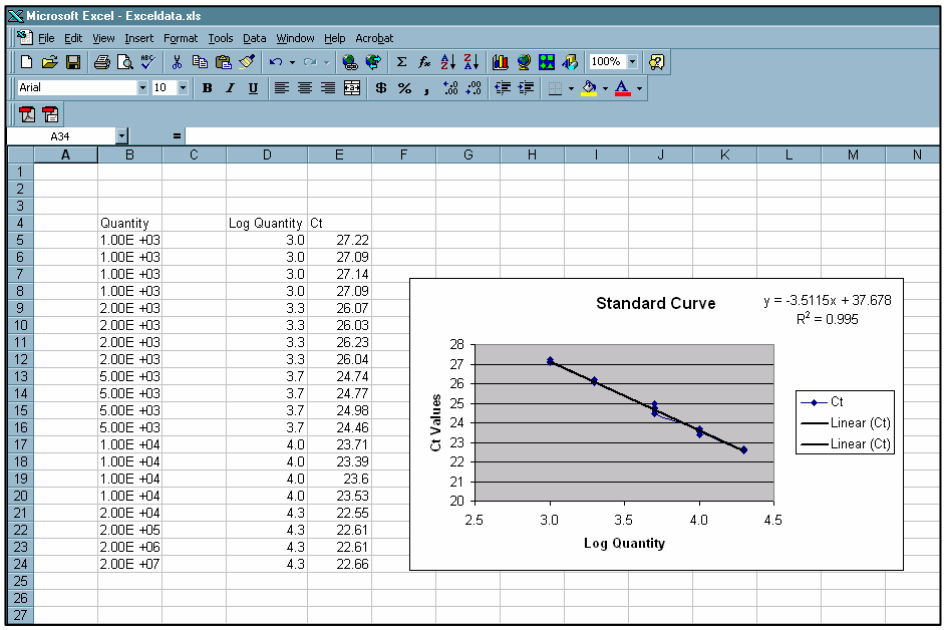
Displaying Equation and R-Squared Values

1. Under the “Options” tab, select the “Display equation on chart” and “Display R-squared value on chart” boxes.



2. Click “OK”.

3. The equation will be displayed on the chart, which can be moved by clicking and dragging it to a new location.



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